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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,761	08/13/2001	Claus G. Lugmair	1012-103 (2000-048)	7561

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Eric M. Dobrusin
Dobrusin & Thennisch PC
Suite 311
401 South Old Woodward Avenue
Birmingham, MI 48009

EXAMINER

LUDLOW, JAN M

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/928,761

Applicant(s)

LUGMAIR ET AL

Examiner

Jan M. Ludlow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14 and 22-60 is/are pending in the application.
- 4a) Of the above claim(s) 8-14, 28, 31-33, 40, 43-45, 52 and 55-57 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-26, 30, 34-39, 41, 42, 46-51, 53, 54 and 58-60 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 8-14 and 22-60 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This application contains claims directed to the following patentably distinct species of the claimed invention:
2. I. Hydrophobic capillary/hydrophilic interface embodiment, claims 8-14, 28, 40, 52.
3. II. Hydrophilic capillary/hydrophobic interface embodiment, claims 26, 38, 41, 46, 53.
4. III. Capillary/size change interface embodiment, claims 31-33, 43-45, 55-57.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, Claims 22-25, 27, 30, 34-37, 39, 42, 47-51, 54, 58-60 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. Newly submitted/amended claims 8-14, 28, 40, 52 (species I) and 31-33, 43-45, 55-57 (species III) are directed to species that are independent or distinct from the species originally claimed for the reasons above.

Since applicant has received an action on the merits for the originally presented species, this species has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 8-14, 28, 40, 52 (species I) and 31-33, 43-45, 55-57 (species III) are withdrawn from consideration as being directed to a non-elected species. See 37 CFR 1.142(b) and MPEP § 821.03.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior

art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

3. Determining the scope and contents of the prior art.
4. Ascertaining the differences between the prior art and the claims at issue.
5. Resolving the level of ordinary skill in the pertinent art.
6. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 22-25, 26, 30, 34-39, 41-42, 46-51, 53-54, 58-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bjornson.

8. Bjornson teaches filling 1-10ul capillaries by capillarity. The capillaries are hydrophilic and may include a hydrophobic stop junction. See, e.g., col. 18, lines 6-53. Fluid may be dispensed to an array of wells 712 by applying pressure (col. 27, lines 40-67). Surface properties may be adjusted by coating with surfactants or wetting agents,

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polymer coating or plasma etching (col. 18, lines 54-59). The device may be made of silica (col. 24, line 49), a suitable microfabrication substrate. Samples are aspirated from an array of samples, e.g., 8 or 16 or 96 wells (col. 10, lines 45-47) and dispensed to a substrate.

9. Bjornson fails to explicitly teach an embodiment with capillaries filled to the hydrophobic stop junction having the fluids delivered by pressure.

10. It would have been obvious to fill the capillaries to the stop junction because Bjornson teaches that the volume drawn is carefully controlled by the diameter and length of the capillary, and in that a stop junction stops flow, it would have been obvious to one of ordinary skill that the capillaries would fill to the stop junction. It would have been obvious to dispense with pressure because Bjornson teaches to do so. It would have been obvious to use different size capillaries in order to control volume by capillary size as taught by Bjornson. It would have been obvious to make the capillary ends at the same level in order to make the capillaries of the same length as shown in Figure 3. It would have been obvious to aspirate/dispense different samples from each of the 8 or 16 or 96 wells in order to test different samples, satisfying the instant library formation claims. With respect to claims 50+, the method of making (microfabrication) is not seen as limiting the structure used.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Seubert teaches a capillary formed of two hydrophilic capillaries joined by a hydrophobic section (Fig. 16), but fail to teach or suggest the instant method.

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13. Sundberg teaches capillaries 34 filled by gravity and capillarity. Hydrophobic coating 58 helps prevent smearing of fluids across the bottom of the capillary plate. The capillaries can hold under 10 microliters and pressure is used to eject droplets. (See, e.g., col. 6, lines 6-7; col. 8, lines 1-35).

14. Ayres and Coleman each teach manual pipets that fill to a controlled volume based on the placement of hydrophobic and hydrophilic surfaces.

15. Hunter teaches hydrophilic capillaries 42 with hydrophobic ends 40. The capillaries can be filled by capillarity, but no pressure method of ejecting to a substrate is disclosed.

16. Applicant's arguments filed August 25, 2004 have been fully considered but they are not persuasive.

Applicant argues that the prior art teaches transfer of existing samples, not synthesis of new materials in a library, but the instant claims directed to library formation do not include a synthesis step.

Applicant argues that Bjornson does not teach hydrophobic capillaries, but this argument is directed to claims non-elected by original presentation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow
Primary Examiner
Art Unit 1743

Jml
November 15, 2004